

REMARKS

In view of the above amendments and following remarks, reconsideration and further examination are requested.

By the current Amendment, claims 14 and 18 have been canceled, claims 11-13, 15-17, 19-23 and 36 have been amended, and claim 37 has been added.

In the Office Action mailed April 28, 2004, claims 11, 23 and 36 were rejected under 35 U.S.C. § 102(b) as being anticipated by Drye. Claims 12 and 13 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Drye in combination with Brofman. Claims 14, 17, 20 and 21 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Drye in combination with Inoue. Claim 18 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Drye in combination with Yoshida. Claim 19 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Drye and Yoshida, and further in combination with Inoue. Claims 15 and 16 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Drye and Inoue, and further in combination with Yoshida. Claim 22 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Drye in combination with Hirano.

The references relied upon by the Examiner are not applicable with regard to the currently amended claims for the following reasons.

Claim 11 now recites

A method for assembling an integral electronic device, comprising:

holding a plurality of LEDs in openings that extend completely through a thickness of a first board, with each of said openings

(i) being defined by a side wall that is capable of shielding light emitted from a corresponding one of said plurality of LEDs,

(ii) being defined so as to limit movement of said corresponding one of said plurality of LEDs within the opening, and

(iii) having an arrangement accuracy corresponding to an arrangement accuracy required of said corresponding one of said plurality of said LEDs; and

electrically connecting a second board to said plurality of LEDs, thereby providing an integral electronic device including said first board, said plurality of LEDs and said second board.

Support for the opening being defined so as to limit movement of LEDs therein, and having an arrangement accuracy corresponding to an arrangement accuracy required of the LEDs, can be found on page 11, lines 6-15 of the original specification, for example. The significance of having the openings being defined so as to limit movement of LEDs therein, and having an arrangement accuracy corresponding to that required of the LEDs, is that manufacturing time, for an electronic device including LEDs connected to a second board, can be reduced along with manufacturing costs.

Specifically, for components such as LEDs in which optical path alignment, and thus mounting accuracy, is important, the method as recited in claim 11 allows for plural LEDs to be simultaneously mounted to a board while ensuring such mounting accuracy and optical path alignment. This is so because of the openings of the first board limiting movement of LEDs therein, while at the same time having an accuracy arrangement corresponding to an arrangement accuracy required of the LEDs. Thus, the LEDs are quickly and accurately received within the openings of the first board such that all the LEDs can be accurately mounted at the same time to the second board, whereby manufacturing time and costs are reduced.

The method as recited in claim 11 is not taught or suggested by any of the references relied upon by the Examiner, either taken alone in combination.

Drye et al. discloses a method of making an IC module assembly wherein within through-holes 41h of substrate 41 are mounted components 42, and connection pins 54 are connected to components 42 via solder bumps 56 and connection points 44a. These connection pins 54 extend through openings in connection substrate 53. However, the openings 41h of Drye et al. are not described to be defined so as to limit movement of components 42 therein, nor are these openings described as having an arrangement accuracy corresponding to an arrangement accuracy required of components 42. Drye et al. is not concerned with limiting movement of the components 42 within openings 41h, nor with requiring an arrangement accuracy of these openings to correspond to that of components 42. Thus, claim 11 is allowable over Drye et al.

Because of these deficiencies of Drye et al., even if the LEDs of Inoue et al. were incorporated into the openings 41h of Drye et al., claim 11 would remain allowable because there would be no teaching of defining openings to limit movement of LEDs therein, nor a teaching of defining these openings so as to have an arrangement accuracy corresponding to an arrangement

accuracy required of the LEDs. Thus, claim 11 is also allowable over a combination of Drye et al. and Inoue et al.


The remaining references do not resolve the above deficiencies of Drye et al, and accordingly, claim 11 is allowable over any possible combination of references relied upon by the Examiner. Thus, claim 11 and its dependent claims are allowable.

In view of the above amendments and remarks, it is respectfully submitted that the present application is in condition for allowance and an early Notice of Allowance is earnestly solicited.

If after reviewing this Amendment, the Examiner believes that any issues remain which must be resolved before the application can be passed to issue, the Examiner is invited to contact the Applicants' undersigned representative by telephone to resolve such issues.

Respectfully submitted,

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